The \texttt{scrlayer} interface \texttt{scrlayer-fancyhdr}\thanks{This is version v0.1.3138 of file \texttt{scrlayer-fancyhdr.dtx}.}

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1 The Purpose of this Package

This package has been made to give users a chance to combine the features of Piet van Oostrum’s \texttt{fancyhdr} [1] with the features of \texttt{scrlayer} [2]. In other words: It has been made to combine the page layers of \texttt{scrlayer} with the page styles of \texttt{fancyhdr}.

In this combination compatibility with \texttt{fancyhdr} is the first aim! Usability and the freedom provided by \texttt{scrlayer} is only the second one. Compatibility with other parts of \texttt{KOMA-Script} is not a primary aim. Perhaps it will become an optional feature in future. Abolishing any real or virtual limitations of \texttt{fancyhdr} other than make it possible to use layers is not an aim and will not be an aim in future.

If you need a better combination of page styles and layers, you should either use the low level interface of \texttt{scrlayer} to define your page styles or — and this is the recommendation of the author — use \texttt{scrlayer-scrpage} instead of \texttt{scrlayer-fancyhdr} or \texttt{fancyhdr}. If you need more compatibility with other parts of \texttt{KOMA-Script}, i.e. with the \texttt{KOMA-Script} classes, you should use \texttt{scrlayer-scrpage} instead of \texttt{scrlayer-fancyhdr} or \texttt{fancyhdr}. 
2 How it works

To combine fancyhdr and scrlayer, scrlayer-scrpage loads both packages. After loading fancyhdr it redefines page style @fancy to make it a layer page style of scrlayer using the newly defined layers fancy.head.even, fancy.head.odd, fancy.foot.even and fancy.foot.odd. The ...head... layers are background layers like the page head of fancyhdr’s page styles (or other usual page styles). The ...foot... layers are foreground layers like the page footer of fancyhdr’s page styles (or other usual page styles). The ...even layers are restricted to even pages, that means left side pages in two-sided documents. The ...odd layers are restricted to odd pages, that means right side pages in two-sided documents or all pages in single-sided documents.

Note: Page style @fancy is an internal basic page style of package fancyhdr. It is used for the user page style fancy. The user page style fancy is also used for fancyhdr’s undocumented page style fancyplain, that also redefines page style plain to be fancyhdr’s internal page style plain@fancy, that also uses fancy but with \if@fancyplain set to \iftrue. There is also an undocumented command \fancyplain{⟨plain code⟩}{⟨fancy code⟩}, that uses the ⟨plain code⟩ if \if@fancyplain is \iftrue and ⟨fancy code⟩ if \if@fancyplain is \iffalse.

Note: Page styles defined using fancyhdr’s command \fancypagestyle also always use page style fancy and so the internal basic page style @fancy.

As a result of the two notes above, every page style of fancyhdr always uses page style fancy and the same internal basic page style @fancy. As a result of redefining page style @fancy to be a layer page style, users can add layers to or remove layers from all fancyhdr page styles by adding layers to or remove layers from page style @fancy. You cannot add layers to or remove layers from fancyhdr’s single page styles fancy, fancyplain, plain@fancy or the page styles defined using \fancypagestyle directly. So using layers is a all or nothing feature with scrlayer-scrpage. However, you can use the second argument of \fancypagestyle to add or remove layers whenever one of the fancyhdr page styles is activated. So this is a move from the scrlayer interface of adding or removing layers to single page styles to the fancyhdr interface of defining modifications of page style fancy.

Another such movement from an scrlayer user interface to a fancyhdr user interface it the decision whether or not automatic running heads are used. scrlayer provides the options automark and manualmark and commands \automark and \manualmark to do this decision and also to configure commands like \partmark, \chaptermark, \sectionmark etc.
With \texttt{scrlayer-fancyhdr} also using page style \texttt{@fancy} does switch to automatic running heads. The first activation of page style \texttt{fancy} still redefines \texttt{\chaptermark} and \texttt{\sectionmark}, if a class with \texttt{\chapter} is used, or \texttt{\sectionmark} and \texttt{\subsectionmark}, if a class without \texttt{\chapter} is used. However, you still can use \texttt{\manualmark} and \texttt{\automark} after switching to a \texttt{fancyhdr} page style to configure the running heads. So this movement is only partial.

Note: Currently, neither \texttt{scrlayer} nor \texttt{fancyhdr} nor \texttt{scrlayer-fancyhdr} do redefine page styles \texttt{headings} or \texttt{myheadings}. And neither \texttt{scrlayer} nor \texttt{fancyhdr} nor \texttt{scrlayer-fancyhdr} do redefine page style \texttt{plain} unless you are activating the undocumented \texttt{fancyhdr} page style \texttt{fancyplain}. So if you like to use layers on \texttt{plain} pages, i.e. usually the first page of a chapter or part or the page with a title head, you have to either use \texttt{fancyhdr}’s undocumented page style \texttt{fancyplain} or redefine page style \texttt{plain} either using \texttt{\fancypagestyle} as documented in the \texttt{fancyhdr} manual or using \texttt{\DeclareNewPageStyleByLayers}, documented in the \texttt{KOMA-Script} manual.

3 How to use the Package

First of all, this package is experimental and should not be used for anything else but testing whether or not it works as documented! This package even is not an official part of \texttt{KOMA-Script}!

To use the package you have to load it, e.g., using:

\begin{verbatim}
\usepackage{scrlayer-fancyhdr}
\end{verbatim}

instead of loading \texttt{scrlayer} and \texttt{fancyhdr} or before or after loading one of these packages. However it is recommended to replace loading \texttt{scrlayer} and \texttt{fancyhdr} by loading \texttt{scrlayer-fancyhdr} because this avoids option clashes. \texttt{scrlayer-fancyhdr} provides all options of \texttt{scrlayer} and passes them to \texttt{scrlayer}. Nevertheless sometimes it may be useful to be able to additionally load \texttt{scrlayer} or \texttt{fancyhdr}.
After this you should be able to use the page styles and commands of \texttt{fancyhdr} and to add layers to or remove layers from the \texttt{fancyhdr}'s internal basic page style \texttt{@fancy}. Note, you are not able to add layers to or remove layers from \texttt{fancyhdr}'s page styles \texttt{fancy, fancyplain, plain@fancy} or page styles defined by \texttt{fancypagestyle}. However adding layers to or removing layers from \texttt{@fancy} will always change all these page styles!

Note: Loading \texttt{scrlayer-fancyhdr} will not make page style \texttt{plain} nor \texttt{headings} nor \texttt{myheadings} or any other page style but \texttt{empty} to automatically be a layer page style!

\section*{4 Known Issues}

Please note, the follow issues are either notes to the package author or notes to the user to avoid them reporting the same issues again and again. Listing these issues does not say they are bugs or features.

\begin{itemize}
\item You are not able to add layers to the user level page style \texttt{fancy} or \texttt{fancyplain} or any page style defined by \texttt{fancypagestyle} but only to the internal page style \texttt{@fancy}. This is intended as explained in this manual.
\item Using \texttt{fancyhdr}'s internal page style \texttt{@empty} could have strange results. However, there is a simple solution for this: Don't use the internal \texttt{@empty} but always the user level page style \texttt{empty}!
\item The vertical position of the page header does differ a little bit, if \texttt{scrlayer-fancyhdr} is used instead of \texttt{fancyhdr}. This could be fixed by a modification of the layers \texttt{fancy.head.odd} and \texttt{fancy.head.even} using \texttt{addvoffset}. More tests are needed.
\end{itemize}

\section*{5 Implementation of \texttt{scrlayer-fancyhdr}}

This section if for developers only.

Note: The main problem of this interface is, that it tries to implement the user interface of package \texttt{fancyhdr} by Piet van Oostrum, that is completely different from \texttt{scrlayer} and not really compatible with \texttt{scrlayer}, using \texttt{scrlayer}. This means, that \texttt{scrlayer-fancyhdr} never can be a drop-in replacement of \texttt{fancyhdr}. Nevertheless it can help to let \texttt{scrlayer} and \texttt{fancyhdr} coexist. To do so

\begin{itemize}
\item the lowest level of \texttt{fancyhdr} should not be the page style but a layer
the page styles of \texttt{fancyhdr} should be layer page styles

- init code of the page styles of \texttt{fancyhdr} should use the layer page init code

Currently it is unsure whether it would be best to do a new implementation or to load original \texttt{fancyhdr} and to only modify some things. First I’ll try the second method and therefore:

1 \langle *body \rangle
2 \\texttt{\textbackslash RequirePackage\{fancyhdr\}}
3 \langle /body \rangle

We need at least one new layer for the new layer page style \texttt{fancy}. However, it could be useful to have not only one but four layers (even side head, odd side head, even side foot, odd side foot).

1 \langle *body \rangle
2 \\texttt{\\textbackslash DeclareNewLayer\[\%}
3 \texttt{background,oddpage,}
4 \texttt{head,}
5 \texttt{\textbackslash layerwidth\%;}
6 \texttt{\f@nch@head\f@nch@Oolh\f@nch@olh\f@nch@och\f@nch@orh\f@nch@Oorh\}}
7 \texttt{\}\{fancy.head.odd\}
8 \\texttt{\\textbackslash DeclareNewLayer\[\%}
9 \texttt{background,evenpage,}
10 \texttt{head,}
11 \texttt{\textbackslash layerwidth\%;}
12 \texttt{\f@nch@head\f@nch@Oelh\f@nch@elh\f@nch@ech\f@nch@erh\f@nch@Oerh\}}
13 \texttt{\}\{fancy.head.even\}
14 \\texttt{\\textbackslash DeclareNewLayer\[\%}
15 \texttt{foreground,oddpage,}
16 \texttt{foot,}
17 \texttt{\textbackslash layerwidth\%;}
18 \texttt{\f@nch@foot\f@nch@Oolf\f@nch@olf\f@nch@ocf\f@nch@orf\f@nch@Oorf\}}
19 \texttt{\}\{fancy.foot.odd\}
20 \\texttt{\\textbackslash DeclareNewLayer\[\%}
21 \texttt{foreground,evenpage,}
22 \texttt{foot,}
23 \texttt{\textbackslash layerwidth\%;}
24 \texttt{\f@nch@foot\f@nch@Oelf\f@nch@elf\f@nch@ecf\f@nch@erf\f@nch@Oerf\}}
25 \texttt{\}\{fancy.foot.even\}

\ps@fancy \@mkboth
\DeclarePageStyleByLayers\[\texttt{fancyhdr}\]
\texttt{\pagestyle\{fancy\}}
\texttt{\textbackslash fancystylefancy}.

To do so \texttt{fancyhdr} first uses a different page style definition, that does the initialization and redefines the page style afterwards. This is still active with \texttt{scrlayer-fancyhdr}. Additionally,
fancyhdr redefines \@mkboth at every selection of the internal page style @fancy. This can be adapted using the onselect feature of the new layer page style @fancy. In my opinion, the \let\@mkboth\markboth used by page style headings of, e.g., the standard classes or the KOMA-Script classes would be best here. However, fancyhdr uses the uncommon \def\@mkboth{\protect\markboth}, which would fail if a class or package tests \@mkboth using \if\@mkboth\markboth. However, KOMA-Script’s \IfActiveMkBoth (see the scrbase chapter in the KOMA-Script manual) does also recognize the fancyhdr definition and copying this is more compatible with fancyhdr.

Note: Redefining page style @fancy instead of fancy does also mean, that features like options automark and manualmark resp. \automark and \manualmark are not fully supported by scrlayer-fancyhdr. Also currently the font features of the KOMA-Script classes are not supported by scrlayer-fancyhdr. However you are now able to combine other features of scrlayer with features of fancyhdr and you can, e.g., use scrlayer-notecolumn with scrlayer-fancyhdr.

A future release of scrlayer-fancyhdr may even provide the font features of the KOMA-Script classes and a working markcase. However, in this case I would have to redefine the initial page style fancy and the layers above.

References


Change History

v0.0 documentation . . . . . . . . . 1
General: some user start of interface . . . . . . . . . 1
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Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

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